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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,742	12/11/2001	Kiyohiko Yokota	216859USOXPC	1739
22850	7590	01/13/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			TESKIN, FRED M	
			ART UNIT	PAPER NUMBER
			1713	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/926,742

Applicant(s)
Yokota, et al.

Examiner
Fred Teskin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE THREE (3) MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Oct 6, 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-19 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

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1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on October 6, 2003, has been entered. Claims 11-19 are currently pending and under examination.

2. The prior art rejection based on Arai et al is **withdrawn** in view of the amendment to claim 11 limiting the substituent(s) on the optionally substituted cyclopentadienyl group or indenyl group to the substituent groups disclosed on page 6 of the specification, and applicants' arguments as presented on pages 5-7 of the latest reponse.

3. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

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4. Claims 11-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over EP 0 721 954 A1 ("European").

The rejection is maintained substantially for the reasons of record (see paper no. 5, pp. 5-6) and those which follow.

5. Applicants' arguments filed October 6, 2003 have been fully considered but are not persuasive of error in the repeated rejection.

Applicants' traverse the rejection, arguing (1) that differences in the electronic structure between alpha-olefins such as 1-octene and aromatic vinyl compounds would lead to a corresponding difference of copolymerizability of the aromatic vinyl compounds as compared to alpha-olefins; and (2) that European fails to disclose or suggest that the aromatic vinyl compounds act as a comonomer that would be equivalent to the exemplified alpha-olefin.

As to point (1), examiner agrees that alpha-olefins such as 1-octene and aromatic vinyl compounds display the structural difference noted on page 9 of applicants' response; however, there is no objective basis in the record for applicants' inference of a "corresponding difference of copolymerizability". More importantly, there is no evidentiary basis for inferring a difference in reactivity of such magnitude that one of ordinary

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skill would have had no reasonable expectation of copolymerizing an acyclic alpha-olefin with an aromatic vinyl compound by practicing the preparation method of European.

In this latter regard, examiner notes that the named inventors of European, being art-skilled practitioners, were no doubt aware of the structural differences between acyclic alpha-olefins and aromatic vinyl compounds but nevertheless included styrene and several alkylstyrene compounds in a list of exemplary alpha-olefins along with various non-aromatic alpha-olefins, and then stated: "[i]n the present invention, the above-mentioned olefins may be used singly *or in a combination of two or more*". (European, page 19, lines 17-22; italics added.) This would have indicated to one of ordinary skill in the art the utility of combinations of the "above-mentioned olefins", including styrene and alpha-olefins such as ethylene, in forming copolymers according to the preparation method of European.

As to point (2), examiner disagrees with applicants' contention that European would not have at least suggested the equivalence as comonomer of aromatic vinyl compounds like styrene to the alpha-olefins exemplified therein.

In addition to relying on the reasoning presented above in reponse to point (1), examiner notes that European, on page 19, teaches "the copolymerization of an olefin and another olefin

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and/or another monomer (i.e., the copolymerization of two different kinds of olefins, the copolymerization of an olefin with another monomer, or the copolymer of different kinds of olefins and another monomer) can be suitably carried out by the use of the above-mentioned catalyst ...". Immediately following this passage is a paragraph wherein alpha-olefins having 2 to 20 carbon atoms are said to be preferable and examples of preferred alpha-olefins are given. The examples include styrene, p-methystyrene, isopropylstyrene and t-butylstyrene, along with fourteen species of acyclic alpha-olefin including ethylene, propylene and higher 1-olefins like 1-octene. The paragraph concludes by stating, "the above-mentioned other olefin can also suitably be selected from these olefins mentioned above."

That the olefins "mentioned above" may be suitably copolymerized is explicitly proposed in the next paragraph on page 19: "[i]n the present invention, the above-mentioned olefins may be used singly or in a combination of two or more thereof. In the case that two or more olefins are copolymerized, these olefins can optionally be combined."

Thus, contrary to applicants' assertion, examiner remains of the view that European would have fairly suggested to those of ordinary skill that the specific aromatic vinyl compounds named therein would have been expected to perform equivalently to alpha-

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olefins such as 1-octene in the disclosed copolymerization of an olefin and another olefin.

It is therefore maintained that, per MPEP 2142, specific citation has been provided which would have motivated one of ordinary skill in the art to modify European with a reasonable expectation of success; i.e., to utilize, in lieu of 1-octene in any of Examples 2, 3, 7, 8, 12-15, 17-20 or 27, an aromatic vinyl compound such as styrene as comonomer, with a reasonable expectation of obtaining a copolymer having the desirable properties associated with an olefin homopolymer or copolymer obtained by use of the European catalyst (e.g., uniform composition and narrow molecular weight distribution; see page 3, lines 3-4).

In addition, European teaches or suggests all the claim limitations, inasmuch as the specific copolymerization examples cited above all utilize species of alkylene/silylene bis-bridged catalyst corresponding to Formula I of independent claim 11.

Finally, applicants note that claim 19 is limited to an embodiment wherein both Y^1 and Y^2 are substituted or unsubstituted alkylene groups and urge that alkylene/alkylene bis-bridged catalysts exhibit unexpectedly high copolymerization activity compared to an alkylene/silylene bis-bridged catalyst. In support, applicants propose to compare Examples 1-3 and 6 with Examples 4-5 and 7 of the specification as filed, noting that the

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alkylene/silylene bis-bridged catalyst of Examples 1-3 and 6 is identical to the catalyst A-5 of European.

While the catalyst of Examples 1-3 and 6 may indeed be identical to catalyst A-5 of European, examiner disagrees that the proposed comparison of specification examples demonstrates unexpected copolymerization activity for alkylene/alkylene bis-bridged catalysts throughout the scope of claim 19.

The proposed comparison is considered deficient in several respects.

First, Examples 1-3 and 6 and Examples 4-5 and 7 are not side-by-side comparative tests: in addition to the difference in bridging groups noted by applicants (alkylene/silylene vs. alkylene/alkylene), the catalysts of Examples 4-5 and 7 contain indenyl ligands substituted at the 3-position with n-butyl or trimethylsilyl; whereas the catalysts of Examples 1-3 and 6 contain unsubstituted indenyl groups. Although this difference could be noncritical, no explanation has been offered in support of noncriticality or for introducing an unnecessary variable between those examples intended to represent the invention of claim 19 and those intended to illustrate the closest prior art. *Cf., In re Dunn*, 146 USPQ 479 (CCPA 1965).

Second, it is noted that Examples 4-5 and 7 employ a single species of alkylene/alkylene bis-bridged catalyst, i.e., a (1,2'-

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ethylene)(1', 2-ethylene) bis-bridged metallocene. Claim 19, by contrast, is generic to catalysts wherein both Y^1 and Y^2 represent any substituted or unsubstituted alkylene group. The alkylene group may be of arbitrary structure and chain length, and may be substituted with one or more arbitrary substituents, including non-hydrocarbon entities. Those skilled in the art would expect catalyst properties such as copolymerization activity to vary with changes in composition of the catalyst component - e.g., changes in structure and chemical nature of the bridging moieties - and the limited experimental data in the specification is insufficient to justify extrapolating that all of the catalysts embraced by claim 19, or even the majority thereof, will produce similar results. In other words, the scope of the experimental evidence is not commensurate with the degree of protection sought by the claim. *In re Dill*, 202 USPQ 805 (CCPA 1979).

6. No claims are allowed.

7. All claims are drawn to the same invention claimed in the application prior to entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS**

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ACTION IS MADE FINAL even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner F. M. Teskin whose telephone number is (571) 272-1116. The examiner can normally be reached on Monday through Thursday from 7:00 AM - 4:30 PM, and can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The appropriate fax phone number for the


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organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1201.


FRED TESKIN
PRIMARY EVALUATOR
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FMTeskin/01-08-04